

MEETING MINUTES
LIGNITE RESEARCH COUNCIL
October 15, 1996
Doublewood Inn, Bismarck, ND

MEMBERS (or their authorized alternates) PRESENT:

Dick Bergstad	International Brotherhood of Electrical Workers, #714
John Bluemle	North Dakota Geological Survey
John Dwyer	Lignite Energy Council
Richard Fockler	Basin Electric Power Cooperative
Bruce Hagen	North Dakota Public Service Commission
Gary Halvorson	NDSU - Land Reclamation Research Center
Ron Haugen	North Dakota Farmers Union
Curtis L. Blohm	Knife River Coal Mining Company
Kent Janssen	Dakota Gasification Company
Marlowe Johnson	Otter Tail Power Company
Michael Jones	Energy & Environmental Research Center (EERC)
Doug Kane	MDU Resources Group, Inc.
Augie Keller	The North American Coal Corporation
Harvey Ness	U.S. Dept. of Energy - Morgantown Energy Tech. Center
Jeff Reinke	Dakota Resource Council
David Sogard	Minnkota Power Cooperative
Chuck Reichert	BNI Coal, Ltd.
Charles E. Schmidt	U.S. Dept. of Energy - Pittsburgh Energy Tech. Center
Francis Schwindt	North Dakota Department of Health
Valdon Swanson	North Dakota Farm Bureau
John Weeda	Cooperative Power
Gordon Westerlind	United Power Association
Ken Zagzebski	Northern States Power

OTHERS PRESENT:

Lyndon Anderson	Lignite Energy Council
Bob Bartosch	Dakota Gasification Company
Ed Englerth	North Dakota Public Service Commission
Karlene Fine	Industrial Commission of North Dakota
James Frederick	ENCOAL Corporation
Vicki Gilmore	Lignite Energy Council
Dot Johnson	Babcock & Wilcox
Brent Knottnerus	ENCOAL Corporation
Dennis McDonald	Babcock & Wilcox
Mel Nelson	Minnkota Power Cooperative
William Peterson	BNI Coal, Ltd.
Clifford R. Porter	Lignite Research, Development & Marketing Program
Vickie Steiner	Association of Energy Producing Counties
John C. Warren	Cooperative Power
Lyle Witham	North Dakota Attorney General's Office

Chairman John Dwyer called the Lignite Research Council meeting to order on October 15, 1996. The meeting began with a working luncheon held jointly with the Lignite Energy Council Executive Committee.

Clifford Porter showed slides as he discussed the following sections of the Lignite Research Council meeting book: I (Financial Update), II (Program Updates), and III (Future Grant Rounds). He also gave a brief background description of the Lignite Research, Development and Marketing Program, which

involves the Lignite Energy Council, Lignite Research Council, North Dakota Industrial Commission and Legislature.

He said the goals and objectives for the R & D program were discussed in September at the Lignite Energy Council's Utility and Producer CEO Planning Conference. The CEOs were asked to rank the areas they thought should receive the highest priority from the R & D program for 1997. The top six priorities are: 1) air toxic emission levels and regulations; 2) mercury emission levels and proposed regulations; 3) sulfur dioxide emissions levels and proposed regulations; 4) Global Climate Change/carbon dioxide controls; 5) Ozone Transport Assessment Group (stringent nitrogen oxide standards); and 6) nitrogen oxide emission levels and proposed regulations.

Porter said funding for the R & D program comes from the coal severance tax. The CEOs proposed a change in how the \$3,000,000 annual R & D program funding is apportioned. They proposed that \$125,000 of the \$2,223,000 in the Demonstration Projects portion of the \$3,000,000 be transferred out of there annually for a matching joint program with the Energy and Environmental Research Center, Electric Power Research Institute and/or the Department of Energy to address consensus environmental issues or increased production and development. Porter said the Lignite Research Council would be asked to vote later in the meeting to recommend to the Industrial Commission that it approve the funding transfer.

In the three program areas (Demonstration, Marketing Studies, Small Projects), there are 25 projects in the 1995-1997 biennium. \$14,200,952 in funding commitments for the 25 projects is from the Lignite Research Fund. Those funds have been matched with \$118,287,667 total dollars in research and development activities.

Porter said the two Lignite Marketing Feasibility Studies that concern mercury emissions from North Dakota lignite-fired power plants are worthwhile to follow because they relate to the R & D priorities. Later in the meeting, the LRC will be asked to vote on Porter's proposed funding extensions to these two contracts.

Financial Update

Porter said \$2,381,780 is available for Demonstration Projects, \$404,829 for Marketing Studies, and \$573,211 for Small Projects. There are four Grant Round XXV requests that will be addressed at this meeting: LRC-XXV-A: Advanced Engineering Development of Coal-fired Low Emission Boiler Systems (Demonstration Project), submitted by Babcock & Wilcox; LRC-XXV-B: Coal Sampling System (Small Projects/combustion) submitted by BNI Coal and Microbeam Technologies; LRC-XXV-C: Upgraded North Dakota Lignite Using the LFC™ Process - A Production and Testing Study (Small Projects/beneficiation), submitted by ENCOAL Corporation; and LRC-XXV-D: Implementation of Regional Lignite Energy Marketing Plan (Small Projects/marketing), submitted by the Lignite Energy Council. Porter said that LRC-XXV-D was submitted as a \$750,000 request for three years. It has been amended to \$825,000 because there is more monetary commitment to the project than originally planned.

Future Grant Rounds

There have been two requests for an additional Grant Round in 1996 for coal demonstration and research and development projects. The application deadline date for this additional grant round will be November 1, 1996. The grant round will be open to requests for all funds. \$520,000 in estimated funding will be available for matching research and development funds for this grant round. \$1.5 million in estimated funding is available for matching demonstration projects in the grant round.

Grant Round dates for 1997 are February 1, June 1 and October 1.

Lignite Research Fund Targeted Funding Amounts for '95-'97 Biennium

It was noted that a Research Program Activities handout that Clifford Porter distributed at this meeting contained computer-caused omissions in the computation of totals for percentages and funding amounts.

The sheet is titled "Lignite Research Fund Targeted Funding Amounts - 1995-1997 Biennium, Summary for the Period of July 1, 1995 - September 11, 1996". All of the figures are listed, but the totals did not compute horizontally or vertically in the section of the chart titled "Research Program Activities - Lignite Research Fund - Summary of Available Funds by Priority Funding Areas".

Update of Two Demonstration Projects

Kent Janssen gave an update about the demonstration project (the Dakota Gasification Company anhydrous ammonia plant) that is in start-up. He said a fire was put in the furnace there on Saturday, October 12. As of today (10/15/96), ammonia prices are strong. A peak price of ammonia occurred a year ago last spring (\$295/ton). DGC is currently selling product out of the plant at \$255 per ton. Janssen said the project is costing more than anticipated. It had been budgeted for approximately \$81 million, but the costs are coming in between \$110 million and \$112 million. The workforce was originally estimated to peak out at 250 craftsmen for the ammonia plant, but ended up at about 600 last month. Of the 49 employees assigned to the ammonia plant, 28 are new hires in the last two weeks. Janssen said that before long, DGC will be able to show that coal requirements for the plant are increasing.

Construction for the Ammonia Sulfate Project at DGC was completed in late June 1996. DGC has averaged about 300 tons of ammonia sulfate produced per day since they came on line with the product in July. Dak Sul 45, an ammonium sulfate fertilizer, is recovered at DGC from the gasification of lignite and is produced by removing sulfur compounds from stack gases.

Chuck Reichert discussed the other demonstration project (SynCoal Transloading Project), which started about three years ago. It involves Minnkota Power Cooperative, BNI Coal and the Rosebud SynCoal Partnership in Montana. Reichert said this is basically a beneficiation project. In February 1996, the project was shelved when it appeared that a 2-year extension of Section 29 tax credits would not be approved by the Senate Finance Committee. In August 1996, when the minimum wage bill was passed, there was a provision in it for extension of Section 29 tax credits. The SynCoal project was reviewed, and a new timeframe established. The project will have a new in service date of July 1, 1998. Currently, the permitting, financing and engineering stages are occurring. Reichert said the project is a "go" for now unless it does not make it through one of those three stages.

Joint Session Ends; LRC Meeting Continues

After the joint session with the Lignite Energy Council Executive Committee ended, the Lignite Research Council meeting continued in the Judicial Room. LRC Chairman Dwyer said an additional agenda item will be Clifford Porter's recommendations concerning funding extensions for the two mercury studies contracts.

Approval of Minutes

Kent Janssen made a motion to approve the minutes of the June 20, 1996 meeting of the Lignite Research Council. Seconded by Chuck Reichert; motion carried.

Grant Round XXV Proposals - Open Session

Porter summarized Technical Peer Reviewers' comments and gave his Technical Advisor Recommendations for the following Grant Round XXV project applications:

LRC-XXV-A: "Engineering Development of Advanced Coal-Fired Low Emission Boiler Systems"; Submitted by Babcock & Wilcox; Principal Investigator (Project Manager) - D. K. McDonald; Funding Request for \$3,000,000; Total Project Costs \$33,000,000; Time frame: 3 years; Demonstration Project Request; Not confidential information.

The purpose of the project is to develop a coal power plant system that can achieve very low emissions and high efficiencies. The proposed new Low Emission Boiler Systems (LEBS) would integrate advanced emission systems for control of NO_x, SO₂, and air toxics. Porter said the proposal received mixed reviews by the technical peer reviewers, and he recommended a Do Not Fund vote by the LRC. The three

technical peer reviewers gave the project an average weighted score of 168 out of a possible 250 points. Two recommended the project not be funded and one recommended that funding may be considered. There are no conflict-of-interest parties among the LRC members.

LRC-XXV-A's principal investigator, Dennis McDonald from Babcock & Wilcox, spoke in favor of the proposal. He said B & W would appreciate any amount of funding for the proposal, and he asked that the LRC consider appointing a committee of LRC members to inform B & W about the LRC's needs for this project. Chuck Reichert asked McDonald what the funding will be for Phase I, II, III and IV of the project. McDonald said there will be a 50% cost share with the federal government.

LRC-XXV-B: "Coal Sampling System"; Submitted by BNI Coal Ltd. and Microbeam Technologies Incorporated; Principal Investigators - William Peterson (BNI), Steven A. Benson (MTI); Request for \$49,820; Total Project Costs \$104,271.22; Time frame: 9 months; Research Program Activity/Combustion Area; Not confidential information. The purpose of the project is to test a coal sampling system that will provide "as-fired" coal samples to determine coal quality effects on cyclone performance. It will relate coal quality of the fuel at the boiler to the boiler operation.

Concerning the proposal, Porter said his Technical Advisor recommendation to the LRC is to vote to fund it. He said that relating coal quality of the fuel at the boiler to the boiler operation is an important element of the coal management system project (Project number FY95-XIX-60). The three technical peer reviewers gave LRC-XXV-B an average weighted score of 205.3/250. All three recommended the proposal be funded. Conflict-of-interest parties are BNI Coal Ltd., Minnkota Power Cooperative and Minnesota Power.

William Peterson of BNI Coal, one of the two principal investigators for the project, spoke in favor of it. He said the coal sampling system will be installed at Unit 2 at the Milton R. Young Station at Center. The system will add to the Coal Quality Management System and make it better, Peterson said.

LRC-XXV-C: "Upgraded North Dakota Lignite Using the LFC™ Process - A Production and Testing Study"; Submitted by ENCOAL Corporation; Principal Investigator - Brent Knottnerus; Request for \$230,000; Total Project Costs \$564,000; Time frame: 5 months; Research Program Activity/Beneficiation; Volume I not confidential. The purpose of the project is to produce and characterize test quantities of upgraded lignite using the LFC process. The LFC process involves the mild gasification of coal. The grant application proposes the testing of 5,000 tons of North Dakota lignite.

As Technical Advisor, Porter's recommendation was Do Not Fund. He said the proposal lacks process information on the lignite sample selected for the demonstration test. No entity with a vested interest in commercialization of North Dakota lignite is supporting this project. Two of the four technical peer reviewers advised Fund and two recommended Do Not Fund. The average weighted score of the technical peer reviewers' evaluations of the project was 174.5/250. There are no conflict-of-interest parties in the LRC membership.

Speaking in support of the project was James Frederick, technical manager for ENCOAL Corporation. He said ENCOAL has a strong history, and has learned how to stabilize its product.

Grant Applications - Confidential Session

Dwyer asked those in attendance who were not members of the Lignite Research Council to leave the room because of confidential information in Volume II of the LRC-XXV-C proposal and the request for confidentiality during the presentation about LRC-XXV-D.

LRC-XXV-C: "Upgraded North Dakota Lignite Using the LFC™ Process - A Production and Testing Study"; Submitted by ENCOAL Corporation; Principal Investigator - Brent Knottnerus; Request for \$230,000; Total Project Costs \$564,000; Time frame: 5 months; Research Program Activity/Beneficiation; Volume II confidential information.

The Volume II confidential information concerning LRC-XXV-C was distributed and discussed, then collected by Karlene Fine after the confidential session presentations. Brent Knottnerus, principal investigator for LRC-XXV-C, spoke in favor of the proposal. Michael Jones asked Knottnerus what advantage North Dakota lignite would have in this project. Knottnerus said North Dakota lignite can be economically upgraded and it would be used as a blend stock or a fuel stock .

Dwyer excused Frederick and Knottnerus from the room before the confidential session continued with LRC-XXV-D:

LRC-XXV-D – “Implementation of Regional Lignite Energy Marketing Plan”; Submitted by Lignite Energy Council; Principal Investigator - John Dwyer; Request for \$750,000 (Amended to \$825,000); Total Project Costs \$1,500,000/\$1,650,000. Time frame: Proposed as an initial 3-year effort. Research Program Activity/Marketing; Grant application is confidential.

The confidential grant application for LRC-XXV-D and Clifford Porter’s confidential printed version of the slides he showed were distributed and discussed, then collected by Fine at the end of the confidential session. Porter said the objective of the project is to improve the image of coal, promote the use of coal as a low-cost, efficient and environmentally compatible energy source, and ensure the continued use and growth of coal-based electric energy in this region. As technical advisor, he recommended the LRC vote to fund LRC-XXV-D subject to the following: Funding be provided for the 3-year program in an amount not to exceed \$825,000; and funding be provided from Demonstration Projects’ funds as required to ensure that the Small Research Projects’ priority target funding amounts are maintained. The three technical peer reviewers’ average weighted score for the proposal was 206/250. All three recommended the project be funded.

Mel Nelson of Minnkota Power Cooperative spoke in support of the project on behalf of the project partners (electric utilities and cooperatives). He discussed this long-term, comprehensive regional lignite energy marketing plan’s background, stakeholder program, advertising campaign and broad-based coalition development. He said the purpose of the proposal is to improve the overall public image of coal in the region, primarily in Minnesota. Nelson said the lignite industry and the state of North Dakota both have the same goals in this regard, since 10% of North Dakota’s economy is based on lignite.

August Keller asked Porter if there is enough financial commitment from the 11 partners to be able to come up with the 50% matching funds for the project. Porter said there is enough commitment for the \$825,000 over the three years of the project.

Michael Jones asked Nelson if there had been any change or improvement in public opinion in Minnesota in the last two years in regard to the externalities issue. Nelson said the answer is no, because the externalities issue is very esoteric. Dwyer said the public opinion numbers are completely opposite in North Dakota, compared with the Minnesota public’s generally negative perception of coal-based energy and its development. Dwyer said that according to the latest polls, 80% of North Dakotans support lignite development and want more lignite development, and about 65% want tax incentives to increase development.

Balloting for LRC-XXV-D (Confidential Grant Round XXV Grant Application)

Dwyer requested that LRC members fill out their ballots for the confidential grant application for LRC-XXV-D (“Implementation of Regional Lignite Energy Marketing Plan”).

Other Matters

Dwyer said that under the Lignite Research Council provisions, North Dakota Attorney General Heidi Heitkamp and a task force of attorneys deemed the LRC-XXV-D grant application as proprietary in nature and of commercial value. Dwyer asked Lyle Witham from the Office of the North Dakota Attorney General to describe this confidentiality pursuant to North Dakota Century Code 54-17.5-06. Witham said

the rules on confidentiality are different when the state is a market participant, and under the Lignite Research Law, there is a research aspect and a marketing aspect to confidentiality. When the state is acting through a state agency as a market participant, the proprietary information that is generated is confidential, just as any other business information is confidential.

Witham said Attorney General Heitkamp appeared at the hearings before the Minnesota Public Utilities Commission in September. Witham also reported that the Minnesota legislature has considered a bill that looks at a carbon tax as a substitute rather than reducing property taxes. That bill will probably be introduced in the next Minnesota legislative session.

**Confidential Session Ends; Open Session Re-opens:
Future Funding Guidelines (Transfer of Funds from Demonstration Projects Area)**

Dwyer opened the meeting again after the confidential session ended. He asked for a motion to accept or not accept the recommendation on the Future Funding Guidelines Proposal fund transfer, which will transfer \$125,000 a year from the Demonstration Projects program to initiate a matching joint program with EERC, EPRI and/or DOE that addresses consensus environmental issues or increased production and development. It was moved by Doug Kane and seconded by Bruce Hagen to accept it. Karlene Fine said the LRC is required to cast ballots for this. Therefore, Dwyer asked Kane to withdraw his motion and Hagen to withdraw his second. They did so. After ballots were cast at the end of the meeting, it was announced the vote by the LRC was 22 Yes (transfer funds) and 1 No (do not transfer funds).

Future Grant Rounds

Dwyer asked for a motion to establish the additional grant round date that had been requested for 1996 (November 1, 1996), and to establish the following grant round dates for 1997: February 1, June 1 and October 1. He asked Karlene Fine if these could be done in the form of a motion; she said they could. It was moved by Curt Blohm and seconded by Doug Kane; motion carried.

Proposed LRC Regulations and Legislation

Dwyer asked if anyone had any issues they wanted brought before the Industrial Commission concerning LRC regulations or any proposed legislation for the 1997 North Dakota Legislature. The Industrial Commission wants to include these in their legislative package. Dwyer said LRC members could telephone him or Fine after the meeting if they did not wish to discuss these issues at the meeting.

Election of LRC Executive Committee and LRC Executive Committee Officers for '97-'99

Dwyer said he had requested a nominating committee (Bruce Hagen, Dick Bergstad and Terry Hildestad) to make recommendations for the LRC Executive Committee and LRC Executive Committee officers for 1997-1999. Hagen moved that the following be elected to serve as the LRC Executive Committee and its officers for 1997-1999: Chairman: John Dwyer, Lignite Energy Council; Vice Chairman: William Goetz, State Senator; August Keller, North American Coal Corporation; Bruce Hagen, Public Service Commission; Kent Janssen, Dakota Gasification Company; Doug Kane, MDU Resources Group, Inc.; David Loer, Minnkota Power Cooperative; Chuck Reichert, BNI Coal, Ltd.; and Valdon Swanson, North Dakota Farm Bureau. Dwyer asked three times if there were any additional nominations from the floor. There were none. The voice vote was unanimous for election of this slate of LRC Executive Committee members and its officers for 1997-1999.

Balloting for LMFS Projects:

Two Additional Funding Requests; New Grant Proposal

Dwyer asked the LRC members to turn in their ballots concerning the following proposals, which Clifford Porter summarized:

Two additional funding requests for marketing assessment studies:

1. \$10,000 more for LMFS-96-22: "Comparative Review on Emissions, Transport and

Deposition of Mercury from North Dakota Lignite-Fired Power Plants” by ENSR Consulting & Engineering; present funding of \$34,940. *ENSR is to review an EPA Mercury Study Report to Congress and determine potential impacts on North Dakota lignite, including mercury emissions, mercury deposition, potential controls, etc. The \$10,000 extension is to be completed by January 1997.*

Balloting result: 22 Recommend Funding; 0 Do Not Fund.

2. \$20,000 more for LMFS-96-23: □ Identification of Mercury Health Effects Studies and Development of Screening Criteria □ by Roth & Associates; present funding of \$65,231. *Roth & Associates is to review an EPA Mercury Study Report to Congress and determine potential impacts on human health in North Dakota and Minnesota. The \$20,000 extension is to be completed by January 1997.*

Balloting result: 22 Recommend Funding; 0 Do Not Fund.

New grant proposal: LMFS-96-24: “Mercury Marketing Development” by Simmons Advertising Inc.; funding: \$10,000; request for: \$10,000. *Simmons Advertising is to develop a ‘Mercury Facts Bulletin’ that will provide information to educate the public about mercury in our environment and the impact of mercury emissions from North Dakota lignite-fired power plants. The project is to be completed by February 15, 1997.*

Balloting result: 22 Recommend Funding; 0 Do Not Fund.

Balloting for Grant Round XXV Proposals

The LRC cast ballots to either recommend or deny funding of the four Grant Round XXV proposals. Balloting results are to be presented to the Industrial Commission for consideration when it reviews these projects on October 17, 1996. The LRC votes were as follows:

LRC-XXV-A: “Engineering Development of Advanced Coal-Fired Low Emission Boiler Systems”; submitted by Babcock & Wilcox: 3 Recommend Funding; 20 Do Not Fund.

LRC-XXV-B: “Coal Sampling System”; submitted by BNI Coal, Ltd. and Microbeam Technologies Incorporated: 21 Recommend Funding; 2 Do Not Fund.

LRC-XXV-C: “Upgraded North Dakota Lignite Using the LFC™ Process - A Production and Testing Study”; submitted by ENCOAL Corp.: 6 Recommend Funding; 17 Do Not Fund.

LRC-XXV-D: “Implementation of Regional Lignite Energy Marketing Plan”; submitted by Lignite Energy Council: 22 Recommend Funding; 1 Do Not Fund.

Amended Application for “Implementation of Regional Lignite Energy Marketing Plan”

Dwyer called for a motion that the Industrial Commission accept the recommendation of the Lignite Research Council and fund the amended application “Implementation of Regional Lignite Energy Marketing Plan” submitted by the Lignite Energy Council, with the funding being provided from Demonstration Projects funds as required to ensure that the Small Research Projects priority target funding amounts are maintained, and to authorize Karlene Fine, executive director of the Industrial Commission, to execute a contract in an amount not to exceed \$825,000. The motion was made by Hagen and seconded by David Sogard; motion carried.

Adjournment

There being no additional matters to discuss, the meeting was adjourned.

Vicki Gilmore, Recording Secretary